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# Consumer Online Retailer Patronage Behavior Model: Impact of Image Interactivity Technology on Consumer's Perception of Store Environment

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## Consumer Online Retailer Patronage Behavior Model:

### Impact of Image Interactivity Technology on Consumer's Perception of Store Environment

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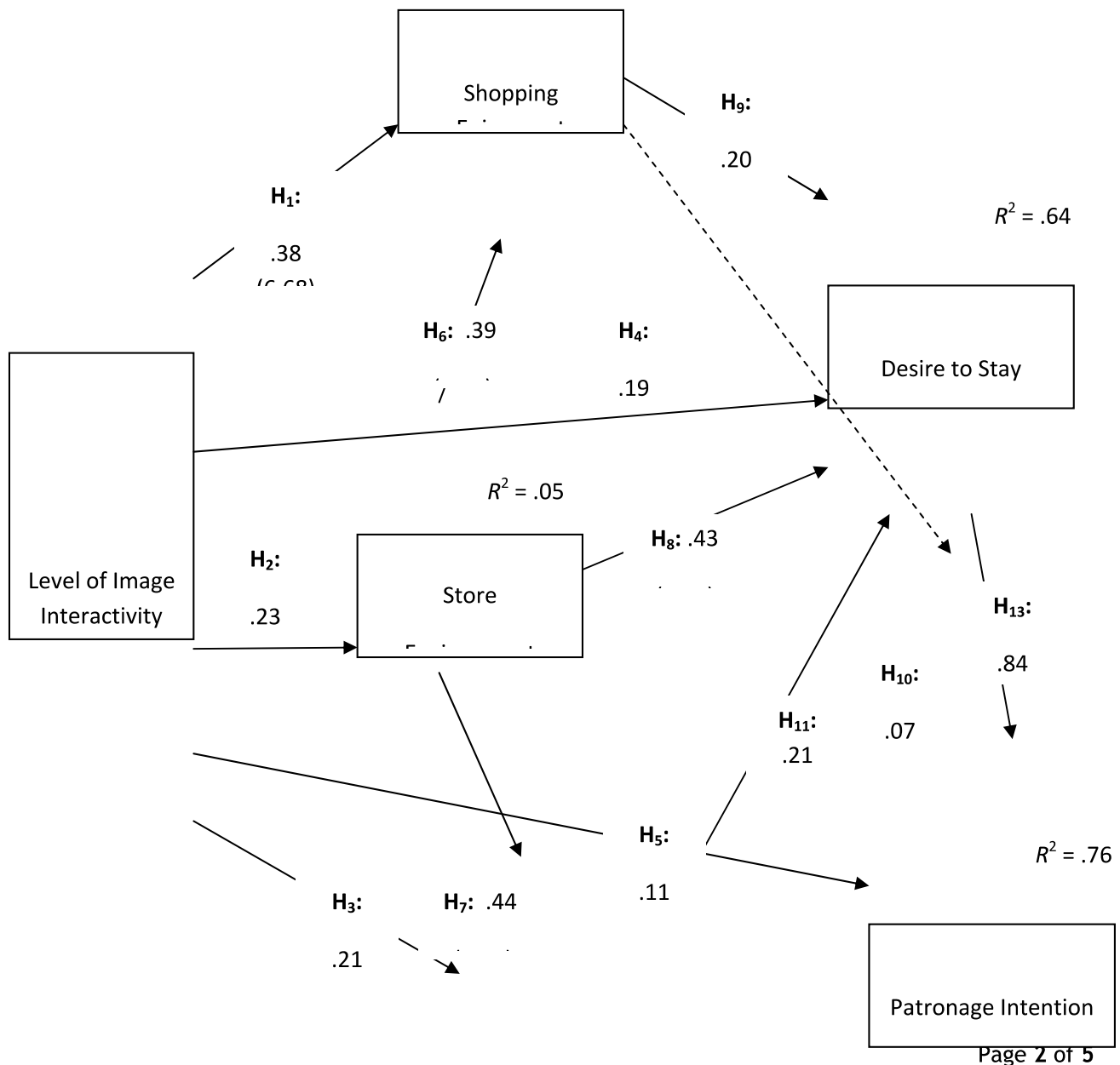
Online apparel retailers have adopted various ways to enhance consumers' online shopping experience such as close-up pictures or zoom-in function, detailed product attribute information, size chart, and mix-and-match functions. One of the most innovative features to enhance the consumer shopping experience is an image interactivity technology (IIT) named, "the 3-D virtual model." The purpose of this study was to examine the influences of this IIT feature on consumer's perceptions of store environment, shopping enjoyment, shopping involvement, a desire to stay and patronage intention. We developed a conceptual model predicting positive relationships between the level of IIT, store environment perception, shopping enjoyment, shopping involvement, and approach response variables based on a mall patronage behavior model developed by Wakefield and Baker (1998) and the previous empirical findings in store image and atmospherics literature.

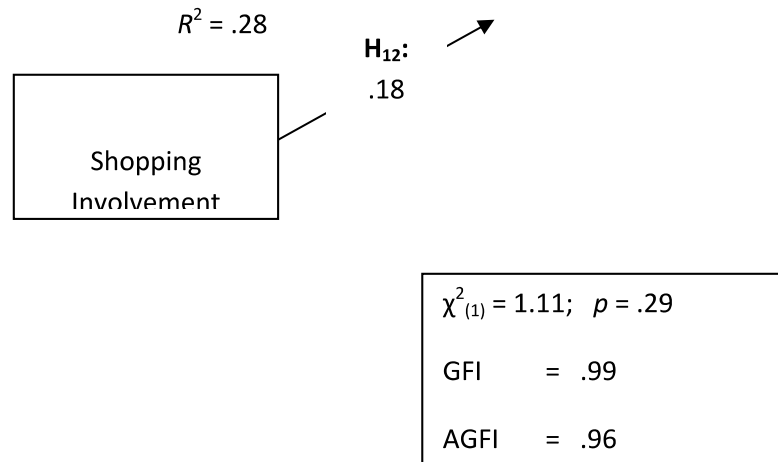
Two hundred and six college students provided usable responses in a between-subjects experimental study. Seventy-four percent were female and ninety-five percent were between the ages of 18-25 years. One stimulus treatment included the basic IIT features of an apparel online retailer (i.e., thumbnails to enlarge product images), whereas the other treatment also had a virtual model for trying on apparel products in various combinations. Participants were randomly assigned one of two treatments Web site and after viewing and interacting with the Web site they fill out the questionnaire. Pretest using ten undergraduate subject responses about ImaginariX.com products, confirmed the acceptability of the styles as stimuli for the sample. To measure the *online store environment* variable, we modified three design and two layout items used by Wakefield and Baker (1998). We used six items to measure *shopping enjoyment* and five items to measure *shopping involvement*, both adopted from Personal Involvement scale (Zaichowsky, 1985). To assess *desire to stay* and *patronage intention to an online store*, we modified items from Wakefield and Baker (1998) and Fiore and Jin (2003). We also created items to gather demographic information (e.g., age range, gender, major). Structural equation modeling was employed to test research hypotheses and a proposed theoretical model.

The analyses of causal models were conducted by a maximum-likelihood estimation procedure using Analysis of Moment Structures (AMOS) version 4.0. The results of causal model analysis obtained

for the proposed conceptual model revealed a *chi-square* of 1.11 with 1 degree-of-freedom ( $p = .29$ ). The GFI was 0.99; AGFI of 0.96; and RMSR was 0.006. The fit indices indicated that the hypothesized model fit the data very well (Kline, 1998). Figure 1 displays the results of the causal analysis, including significant standardized path coefficients and *t*-values for each relationship as well as squared multiple correlations ( $R^2$ ) for each endogenous construct.

Figure 1. A final theoretical model of consumer online retailer patronage behavior





Notes: Standardized path estimates are reported with *t*-values in parentheses.

An insignificant path is indicated by a broken line.

All hypotheses except one were statistically supported. Hypotheses 1 through 5 examined the effects of experimental treatment, the level of image interactivity of merchandise presentation, on shopping enjoyment, store environment perception, shopping involvement, desire to stay, and patronage intention. We expected to see significant differences in all endogenous variables due to the difference between two treatment stimuli—high and low IIT provided by the retail Web site. Results showed that level of image interactivity had a significant positive effect on shopping enjoyment (H1), store environment (H2), shopping involvement (H3), desire to stay (H4), and patronage intention (H5). As we hypothesized, consumer's perception of online store environment exhibited a positive impact on shopping enjoyment (H6) and shopping involvement (H7). In addition, the proposed positive influence of online store environment on the desire to stay at the site (H8) received support. Results revealed that the proposed positive relationships between enjoyment and the desire to stay (H9), shopping involvement and the desire to stay (H11), involvement and patronage intention (H12) received support, whereas a positive relationship between enjoyment and patronage intention did not receive support (H10:  $\beta_{51} = .07, t = 1.13, p = .257$ ). Finally, Hypothesis 13, proposing a positive relationship between the desire to stay and patronage intention, received support.

The decomposition of effects analysis (Table 1) showed that our proposed conceptual model explained a substantial amount of variance for both patronage intention ( $R^2 = .76$ ) and desire to stay ( $R^2 = .64$ ). For patronage intention, store environment had the strongest indirect effect (.56), followed by the level of image interactivity (.40), and desire to stay had the strongest direct and total effect (.84). All predictor variables had significant direct and/or indirect effects on patronage intention, except shopping enjoyment (.07). This result suggests that the impact of shopping enjoyment on patronage intention

Table 1. The results of decomposition of effects analysis

Dependent Variable	Independent Variables	Total Effects	Indirect Effects	Direct Effects
Shopping involvement	Level of IIT	.31*	.10*	.21**
	Store environment perception	.44**	-	.44**
Shopping enjoyment	Level of IIT	.47**	.09*	.38**
	Store environment perception	.39*	-	.39*
Desire to stay	Level of IIT	.45*	.26*	.19**
	Store environment perception	.60*	.17**	.43*
	Shopping enjoyment	.20*	-	.20*
	Shopping involvement	.21*	-	.21*
Patronage intention	Level of IIT	.29*	.18*	.11**
	Store environment perception	.56*	.56*	-
	Shopping enjoyment	.24*	.17*	.07
	Shopping involvement	.36*	.18*	.18*
	Desire to stay	.84**	-	.84**

Notes: Standardized path estimates are reported. \*  $p < .05$ ; \*\*  $p < .01$

might be mediated by the desire to stay. The significant indirect effect of shopping enjoyment on patronage intention (.17) supported this possible explanation.



We contributed to the field by proposing and testing a conceptual model of consumer patronage behavior in the online retailing environment. In addition, no empirical study investigated the effects of a 3-D virtual model for apparel products selling over the Internet. The present study extends the scope of empirical studies of the IIT features from previous ones (Fiore & Jin, 2003; Li, Daugherty, & Biocca, 2003). The findings of this study yield important insights and implications for online retailers and marketers. Online apparel retailers may adopt this higher IIT, a 3-D virtual model, not only to enhance the consumer's virtual product examination but also to improve their perception of online store environment, which in turn affects a consumer's positive emotional state and involvement with shopping process at the retailer as well as positive approach responses toward the online retailer. This experiential aspect of the 3-D virtual model feature would attract more customers to visit the store and browse merchandise offerings online and eventually increase the sales online and their patronage intention to the online retailer.

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